



**Building The  
Wireless Future™**

November 28, 1995

**CTIA**

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**NOV 28 1995**

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Mr. William F. Caton  
Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

**Re: Ex Parte Presentation**  
CC Docket No. 94-54

Dear Mr. Caton:

Today, the Cellular Telecommunications Industry Association ("CTIA") distributed copies of the attached materials to the following FCC employees: Ms. Ruth Milkman and Mr. John Nakahata of Chairman Hundt's office, Ms. Lauren Belvin and Mr. Rodolfo Baca of Commissioner Quello's office, Ms. Lisa Smith and Mr. Todd Silbergeld of Commissioner Barrett's office, Mr. Richard Welch, Mr. David Furth and Ms. Susan Tollar of Commissioner Chong's office, Ms. Mary McManus and Mr. David Siddall of Commissioner Ness's office, Ms. Regina Keeney, Mr. James Schlichting and Mr. David Sieradzki of the Common Carrier Bureau, and Dr. Robert Pepper, Mr. Donald Gips and Mr. Greg Rosston of the Office of Plans and Policy.

Pursuant to Section 1.1206 of the Commission's Rules, an original and one copy of this letter and attachments are being filed with your office. If you have any questions concerning this submission, please contact the undersigned.

Sincerely,

Randall S. Coleman

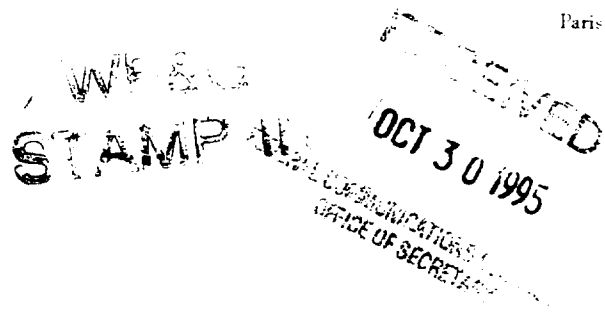
Attachments

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October 30, 1995



Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

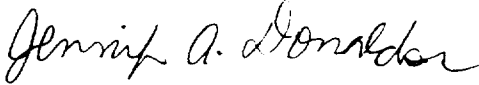
Re: CC Docket No. 94-54 -- Ex parte presentation

Dear Mr. Caton:

Attached is a document forwarded to Ms. Karen Brinkmann, Special Counsel for Local Competition, which presents our views regarding § 332 of the Communications Act, 47 U.S.C. § 332, and jurisdictional issues. We are submitting two copies of this document for inclusion in the record.

Please feel free to call if you have any questions.

Sincerely,

  
Jennifer A. Donaldson

enclosure

cc: Karen Brinkmann

WILLKIE FARR & GALLAGHER

Washington, D.C.  
New York  
London  
Paris

October 27, 1995

Ms. Karen Brinkmann  
Special Counsel for Local Competition  
Common Carrier Bureau  
Federal Communications Commission  
1919 M Street, N.W., Room 518  
Washington, D.C. 20554

Re: Section 332 and jurisdictional issues

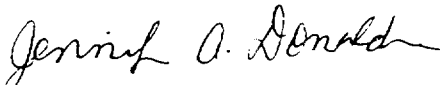
Dear Karen:

This responds to your request for information regarding the scope of Section 332's preemptive language as it impacts interconnection compensation issues arising between LECs and CMRS providers.

As we have previously noted, we believe that Section 332 provides the Commission with the authority, and arguably the obligation, to preempt state regulation of LEC to CMRS interconnection compensation rates in favor of a uniform, federal policy. Moreover, we believe that the historical record reflects the need for limited Commission intervention regarding LEC to CMRS interconnection compensation to ensure that LECs are unable to exercise their substantial, persistent market power to the detriment of CMRS competition. Our analysis of these issues is outlined in the attached document.

Please feel free to call if you have any questions or need additional information.

Sincerely,



Philip L. Verveer  
Jennifer A. Donaldson

## THE BASICS OF INTERCONNECTION COMPENSATION PREEMPTION

### COMMISSION'S TREATMENT OF INTERCONNECTION COMPENSATION ISSUES

In the Commission's analysis of LEC to CMRS interconnection issues, it addressed in general terms the application of its LEC to cellular interconnection policies to govern LEC to CMRS relationships.<sup>1</sup> When considering whether to preempt state regulation of LEC to CMRS interconnection rates, the Commission, in reliance upon its 1987 analysis of LEC to cellular interconnection issues,<sup>2</sup> chose to refrain from federal preemption of state regulation of such rates "at this time."<sup>3</sup> Apparently, as a policy matter, the Commission viewed the rates charged for interconnection as "segregable."<sup>4</sup> The Commission instead proposed an interstate mutual compensation scheme for the termination of LEC/CMRS traffic coupled with a decision to explore the efficacy of requiring LECs to tariff all interconnection rates.<sup>5</sup>

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<sup>1</sup> See Regulatory Treatment of Mobile Services, Second Report and Order in GN Docket 93-252, 9 FCC Rcd 1411, at 1497-1501 (1994) ("CMRS Second Report"); see also Equal Access and Interconnection Obligations Pertaining to Commercial Mobile Radio Services, Notice of Proposed Rule Making and Notice of Inquiry in CC Docket 94-54, 9 FCC Rcd 5408, at 5450-5453 (1994) ("CMRS Interconnection Rule Making").

<sup>2</sup> See CMRS Second Report at 1498 (citing The Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services, Declaratory Ruling, 2 FCC Rcd 2910, 2912 (1987)).

<sup>3</sup> CMRS Second Report at 1498.

<sup>4</sup> Id.; see also CMRS Interconnection Rule Making at 5467-5469. It appears that the Commission, by its conclusion, was only loosely following the post-Louisiana approach to interpreting and applying Section 2(b), 47 U.S.C. § 152(b). It appears that it did not separately analyze the express preemptive statements by Congress in Section 332, 47 U.S.C. § 332.

<sup>5</sup> Id. at 1498-1499. The Commission solicited comment regarding the need for LEC tariff obligations in its CMRS Interconnection Rule Making, see 9 FCC Rcd at 5450-5457.

More recently, the Commission has affirmed its decision not to interfere with state regulation of LEC to CMRS interconnection rates. See Petition on Behalf of the Louisiana Public Service Commission for Authority to Retain Existing Jurisdiction Over Commercial Mobile Radio Services Offered Within the State of Louisiana, Report and Order in PR Docket 94-107, 10 FCC Rcd 7898,

(continued...)

Importantly, for these purposes, and as a policy matter, in considering whether CMRS providers should have direct interconnection obligations, the Commission concluded that the statutory language within Section 332 clearly "preempts state regulation of interconnection rates of CMRS providers."<sup>6</sup> Importantly, the Commission, in reaching this conclusion, recognized that the rates charged by CMRS providers comprehended charges to co-carriers (i.e., other CMRS providers) as well as end-user (i.e., customer) charges. That same authority controls in this case, and with the same preemptive result.

In light of Section 332's express preemptive mandate, and the Commission's statutory charge to secure competition and efficiency in the CMRS market, the Commission should adopt a comprehensive interconnection compensation rule.<sup>7</sup> Given the Commission's recognition that "commercial mobile radio service interconnection with the public switched network will be an essential component in the successful establishment and growth of CMRS offerings,"<sup>8</sup> as a matter of policy, it is the correct decision.

The record developed in response to the Commission's inquiries demonstrates that limited Commission intervention in this area is warranted. In submissions received during the pleading cycle leading to the CMRS Second Report, including the subsequent reconsideration phase, as well as the comments received in response to the Commission's CMRS Interconnection Rule Making, commenters chronicled the need for Commission intervention to ensure that LECs did not unfairly exercise their market and bargaining power to the detriment of competition.

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<sup>5</sup>(...continued)

7908 (1995) ("we note that Louisiana's regulation of the interconnection rates [charged] by landline telephone companies to CMRS providers appears to involve rate regulation only of the landline companies, not the CMRS providers, and thus does not appear to be circumscribed in any way by Section 332(c)(3)").

<sup>6</sup> Id. at 1500 (citing 47 U.S.C. § 332(c)(3)).

<sup>7</sup> Such action would be entirely in keeping with the Commission's explicit recognition of the utility of preemptive action: "the charge for the intrastate component of interconnection [at times] may be so high as to effectively preclude interconnection. This would negate the federal decision to permit interconnection, thus potentially warranting our preemption of some aspects of particular intrastate charges." Id. at 1497. (citation omitted).

<sup>8</sup> CMRS Second Report at 1499.

Moreover, several commenters opined to a limited extent regarding the Commission's preemptive authority under § 332.

Notably, commenters favoring a tariff filing requirement in the Commission's CMRS interconnection Rule Making, including Cox, Comcast, the California Public Utilities Commission, GSA and MCI, did so because of their belief that tariff filing requirements were necessary to curb LEC discriminatory conduct. Moreover, it appears that the majority of commenters opposing a tariffing requirement did so more in response to their perception of the burdens associated with tariffing rules, and not necessarily because they perceived that the market was functioning properly. Of special import, Cox and Comcast, in their various submissions to the Commission, referenced studies conducted by Professor Gerald Brock.<sup>9</sup> The Brock studies describe in some detail the problems surrounding interconnection compensation issues. As the Brock studies make clear, pricing compensation for termination services is not a mobile services-specific problem, but rather one endemic to the entire telecommunications industry.

Regarding preemption, in both the CMRS Second Report proceeding and the CMRS Interconnection Rule Making, preemption issues were not generally the focal points of commenter analysis. Those commenters addressing this issue tended to follow industry lines, *i.e.*, mobile services providers favored Commission preemption while state regulatory authorities and LECs generally opposed preemption. Based upon a cursory review, it appears that an in-depth analysis of this issue was not conducted, and that the record to date requires supplementary analysis.

In sum, while the Commission has yet to adopt or propose a comprehensive, federal plan to govern LEC to CMRS interconnection compensation, the record supports Commission action in this regard. The following sections detail the Commission's preemptive authority (and obligations) under the Communications Act.

### **THE BASICS OF PREEMPTION**

The Supremacy Clause of the U.S. Constitution empowers Congress to preempt state and local law.<sup>10</sup> Preemption by federal statute can occur in several ways, including: (1) by a clear expression of intent to preempt; and (2) where compliance with

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<sup>9</sup> See Gerald W. Brock, The Economics of Interconnection (April 1995).

<sup>10</sup> Congress, in turn, may confer its power upon federal agencies.

both state and federal law is impossible.<sup>11</sup> The common carrier provisions of Title II of the Act generally reflect a dual regulatory scheme with respect to telecommunications services, i.e., the Commission retains jurisdiction over interstate matters while intrastate regulation resides with the states.<sup>12</sup> However, with respect to mobile services, state jurisdiction is explicitly limited by Section 332.<sup>13</sup>

## SECTION 332 ANALYSIS

### SECTION 332(a) POLICY GOALS

In revising Section 332, Congress intended to promote a uniformly-regulated, efficient, competitive CMRS market. For this reason, Congress charged the Commission with implementing regulatory policies which foster the full development of the CMRS market. Congress envisioned that this process may well evolve to CMRS providers acting as competitors to the local loop.<sup>14</sup>

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<sup>11</sup> See Louisiana Public Service Commission v. FCC , 476 U.S. 355, 368-369 (1986) ("Louisiana").

<sup>12</sup> Specifically, section 1, 47 U.S.C. § 151, grants the Commission jurisdiction over interstate telecommunications matters. The Communications Act specifically reserves to the states "jurisdiction with respect to . . . charges, classifications, practices, services, facilities [and] regulations for or in connection with intrastate communication service." 47 U.S.C. § 152(b).

<sup>13</sup> Section 332 effects a dramatic change upon the Section 2(b) jurisprudence with its explicit preemption of state regulation over CMRS rates and entry. The Commission also possesses authority to preempt state regulation to encourage and facilitate the further build-out of a competitive, efficient interstate telecommunications services infrastructure. As discussed below, this retention of authority by the Commission under Section 2(b) of the Act, 47 U.S.C. § 152(b), also serves as a basis, albeit more limited, to preempt state regulation of LEC to CMRS interconnection compensation rates.

<sup>14</sup> Section 332 contains examples of Congress' recognition of and providing for competitive entry by CMRS carriers into the local exchange market. See, e.g., 47 U.S.C. § 332(c)(3)(A) ("Nothing in this subparagraph shall exempt providers of commercial mobile services (where such services are a substitute for land line telephone exchange service for a substantial portion of the communications within such State) from requirements imposed by a State commission on all providers of telecommunications services necessary to ensure the universal

(continued...)

Under Section 332(a), the Commission, in managing CMRS spectrum, is obligated to reduce regulatory burdens on spectrum users, improve efficient spectrum use and overall efficiency, increase interservice sharing opportunities between CMRS providers and other services (i.e., encourage maximum utilization of spectrum), encourage competition and ensure the safety of life and property. Specifically, Section 332(a) provides that the Commission, in managing mobile services, consider consistent with § 1 of the Act<sup>15</sup> a number of policy objectives including whether its actions will:

- (1) promote the safety of life and property;

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<sup>14</sup>(...continued)  
availability of telecommunications service at affordable rates.") As the legislative history clarifies, see H.R. Conf. Rep. No. 213, 103rd Cong., 1st Sess. 493 (1993), "the Conferees intend that the Commission should permit States to regulate radio service provided for basic telephone service if subscribers have no alternative means of obtaining basic telephone service. If, however, several companies offer radio service as a means of providing basic telephone service in competition with each other, such that consumers can choose among alternative providers of this service, it is not the intention of the conferees that States should be permitted to regulate these competitive services simply because they employ radio as a transmission means." ("Conference Report").

In addition to revealing Congress' vision regarding the competitive evolution of CMRS, these statements serve as well to illustrate Congress' intent that CMRS providers be subject to minimal state regulation. That is, when CMRS providers are the sole service providers (and therefore act as a substitute to the LEC), Congress limited state regulation of these CMRS providers solely to universal service concerns and no more. Compare Petition of Arizona Corporation Commission, to Extend State Authority Over Rate and Entry Regulation of All Commercial Mobile Radio Services, Report and Order and Order on Reconsideration in PR Docket 94-104 and GN Docket 93-252, 10 FCC Rcd 7824, 7834, 7838-7839 (1995) (FCC rejected Arizona Commission's attempts to retain CMRS rate regulation based upon universal service concerns; FCC noted that Arizona failed to meet the statutory criteria for such regulation.)

<sup>15</sup> 47 U.S.C. § 151. Among other things, § 1 of the Act admonishes the Commission "to make available, so far as possible, to all the people of the United States a rapid, efficient, nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges." Id. (emphasis added).



(2) improve the efficiency of spectrum use and reduce the regulatory burden upon spectrum users, based upon sound engineering principles, user operational requirements, and marketplace demands;

(3) encourage competition and provide services to the largest feasible number of users; or

(4) increase interservice sharing opportunities between . . . mobile services and other services.<sup>16</sup>

The policy goals of Section 332(a), read in conjunction with Congress' regulatory forbearance mandate both at the state and federal level discussed below, render it appropriate for the Commission to preempt inconsistent intrastate interconnection compensation arrangements.

#### **SECTION 332(c) PREEMPTION PROVISIONS**

By its terms, Section 332 provides a clear statement by Congress that all similar CMRS services should be subject to the same treatment, but not be treated like traditional common carriers, e.g., the LEC. Because of the presence of CMRS competition and the promise of its continued growth and development, Congress permitted the Commission to forbear from burdensome Title II requirements with respect to CMRS.<sup>17</sup> Moreover, in recognition of the interstate nature of mobile services and the federal interest in fostering nationwide, seamless wireless networks as part of the NII, it preempted state regulation of CMRS rates and entry.<sup>18</sup>

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<sup>16</sup> See 47 U.S.C. § 332(a)(1)-(a)(4) (emphasis added). While this subsection is framed with reference solely to "private mobile services," the determinations required to be made by the Commission necessarily include consideration of all mobile services including CMRS. As the House and Conference Reports are silent on this point, one can logically infer that the retention of the word "private" in the 1993 amendments to Section 332(a) was due to inadvertence.

<sup>17</sup> See 47 U.S.C. § 332(c)(1)(A). The principles underlying Title II common carrier regulation were intended for the monopoly communications provider -- regulation was designed to achieve market outcomes approximating those that occur within a competitive milieu.

<sup>18</sup> See 47 U.S.C. § 332(c)(3)(A). See also H.R. Rep. No. 111, 103rd Cong., 1st Sess. 260 (1993) ("To foster the growth and development of mobile services that, by their nature, operate without regard to state lines as an integral part of the national (continued...)

This preemptive action on the part of Congress fundamentally and permanently altered the role of state and local governments in regulating CMRS. It necessarily impacts state regulation of LEC to CMRS intrastate interconnection rates. Specifically, § 332(c)(3)(A) provides in relevant part:

Notwithstanding sections 2(b) and 221(b), no State or local government shall have any authority to regulate the entry of or the rates charged by any commercial mobile service . . . except that this paragraph shall not prohibit a State from regulating the other terms and conditions of commercial mobile services.

Thus, the statute provides that states have no authority over rates charged by CMRS providers, nor can states regulate CMRS entry.

By its very nature, this prohibition against state action comprehends intrastate interconnection compensation charges negotiated between LECs and CMRS carriers. The rates charged by CMRS providers for completing LEC traffic are rates charged by a CMRS provider. Moreover, the explicit and absolute prohibition against entry regulation comprehends state regulation of LEC interconnection rates as well. That is, any entry barriers, whether entirely or merely partially effective, whether direct or indirect, are prohibited. Therefore, states may not directly or indirectly impede entry, either entirely or partially (e.g., through added cost or delay) by their regulation of LEC to CMRS interconnection compensation rates.<sup>19</sup>

Further, the notion that states do not have "any authority" under Section 332 over rates strongly suggests that states should not be permitted to indirectly affect LEC to CMRS interconnection rates through their lawful exercise of authority over the "terms

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<sup>18</sup>(...continued)  
telecommunications infrastructure, new section 332(c)(3)(A) also would preempt state rate and entry regulation of all commercial mobile services.") ("House Report").

<sup>19</sup> Congress' action to preempt entry regulation for mobile services represents a fundamental shift in policy from Section 2(b) of the Act, 47 U.S.C. § 152(b), so that to take the most stringent possible view of Section 2(b), states no longer "retain jurisdiction over purely intrastate calls notwithstanding the economic effect such State jurisdiction might have on the interstate market." See Nat'l Ass'n of Regulatory Util. Comm'rs v. FCC, 746 F.2d 1492, 1500 (D.C. Cir. 1984) (Bork, J.).

and conditions."<sup>20</sup> The legislative history supports this analysis. Specifically, the House Report's discussion of "terms and conditions" refers, among other things, to consumer protection measures such as "customer billing information and practices and billing disputes";<sup>21</sup> importantly, there is no mention of any terms or conditions that limit or modify the complete preemption of carriers' rates.

And viewed from a broader perspective, the legislative history also supports this construction of Section 332. Both the House and Conference reports detail Congress' intention to create a national policy for wireless services designed to minimize intrusive federal and state regulation.<sup>22</sup> Such a policy is predicated, in part, upon regulatory parity and uniformity notions, i.e., neither federal nor state nor local governments, by their regulatory efforts, are entitled to adopt regulations which introduce disparity among similar services. It also is predicated upon Congress' desire to promote competition, new technologies and the rapid buildout of a national wireless communications infrastructure.

In revising Section 332, Congress sought to ensure regulatory parity among CMRS providers because "the disparities in the current regulatory scheme [e.g., private mobile carriers are exempted from state and federal regulation of rates and entry while common carrier mobile services are not] could impede the continued growth and development of commercial mobile services."<sup>23</sup> In addition, it intended that all CMRS providers be

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<sup>20</sup> As explicated in the House Report at 261, "other terms and conditions" is meant to include "matters generally understood to fall under 'terms and conditions.'" As Section 2(b) reserves with the states jurisdiction over intrastate telecommunications matters, including intrastate terms and conditions, any limitations on state and local jurisdiction arising under a traditional Section 2(b) analysis would equally apply with respect to state and local regulation of mobile services "other terms and conditions" under Section 332.

<sup>21</sup> House Report at 261.

<sup>22</sup> Moreover, in at least one instance, the floor debates allude to the need for only minimal state regulation. See 139 Cong. Rec. H3287 (daily ed. May 27, 1993) (statement of Rep. Markey).

<sup>23</sup> See House Report at 260. See also Conference Report at 494 ("in considering the scope, duration or limitation of any State regulation [the Commission] shall ensure that such regulation is consistent with the overall intent of this

(continued...)

subject to "[u]niform rules . . . to ensure that all carriers providing such services are treated as common carriers" under Title II of the Act.<sup>24</sup> By permitting regulatory forbearance of Title II provisions, Congress intended "to establish a Federal regulatory framework to govern the offering of all commercial mobile services."<sup>25</sup>

Congress also specifically found it necessary to "preempt state rate and entry regulation" of CMRS providers to "foster the growth and development of mobile services that, by their nature, operate without regard to state lines as an integral part of the national telecommunications infrastructure."<sup>26</sup>

As these statements show beyond dispute, Congress intended that the mobile services marketplace function efficiently, competitively, and with a minimum of regulatory intervention. Regulatory intervention, whether federal or state, would not be tolerated if it introduces disparate treatment of similar services. By amending Section 332, Congress ensured that neither local nor federal government could harm CMRS competition or impair the continued build out of our nation's wireless communications infrastructure. State and local governments may not lawfully bar entry, create regulatory disparities or introduce significant inefficiencies in the production of CMRS

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<sup>23</sup>(...continued)  
subsection as implemented by the Commission, so that, consistent with the public interest, similar services are accorded similar regulatory treatment.") (emphasis added).

<sup>24</sup> House Report at 259.

<sup>25</sup> See Conference Report at 490. See also 139 Cong. Rec. S7996-S7997 (daily ed. June 24, 1993). Congress incorporated by reference the findings of both the House bill and the Senate version. Section 402(13) of the Senate version finds that "because commercial mobile services require a Federal license and the Federal Government is attempting to promote competition for such services, and because providers of such services do not exercise market power vis-a-vis telephone exchange service carriers and State regulation can be a barrier to the development of competition in this market, uniform national policy is necessary and in the public interest." (emphasis added).

<sup>26</sup> House Report at 260. Moreover, while § 332 permits states to petition under certain circumstances to re-regulate CMRS provider rates, Congress intended that the Commission, when considering such petitions, should "give the policies embodie[d] in Section 332(c) an adequate opportunity to yield the benefits of increased competition and subscriber choice." Id. at 261.

through their regulation of LEC to CMRS interconnection compensation rates.

## SECTION 2(b) ANALYSIS

Section 2(b) of the Act<sup>27</sup> provides an alternative basis for Commission preemption in this area. While the case law interpreting the Commission's preemptive authority under Section 2(b) is rather amorphous, it does recognize an "impossibility" rationale which permits the Commission to preempt state regulations which essentially negate legitimately exercised federal authority.

In this case, the Commission is justified in preempting inconsistent LEC to CMRS interconnection compensation rates to ensure the efficient, competitive buildout of nationwide wireless communications infrastructure. Any state interconnection compensation regulatory policy contrary to the Commission's comprehensive rule would essentially negate the fulfillment of this legitimate federal policy, and therefore is subject to preemption.

Louisiana Public Service Commission v. FCC,<sup>28</sup> recognizes that in certain situations it would not be possible to separate interstate and intrastate components, and where that is so, federal preemption would be warranted. It thus cites with approval previous cases which relied upon the impossibility of separating interstate from intrastate components in concluding that preemption was warranted.<sup>29</sup>

Consistent with Louisiana, the lower courts have continued to recognize an exception to section 2(b), permitting Commission preemption when the states' exercise of authority unavoidably would negate the legitimate exercise of the Commission's own interstate authority. These cases variously recite that a demonstration of physical impossibility of separating interstate and intrastate components is required to allow federal

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<sup>27</sup> 47 U.S.C. § 152(b).

<sup>28</sup> 476 U.S. 355 (1986).

<sup>29</sup> Id. at 375, note 4 (citing North Carolina Util. Comm'n v. FCC, 537 F.2d 787 (4th Cir. 1976), cert. denied, 429 U.S. 1027 (1976); North Carolina Util. Comm'n v. FCC, 552 F.2d 1036 (4th Cir. 1976), cert. denied, 434 U.S. 874 (1977) (FCC was within its authority to allow subscribers to provide their own telephones and to preempt state regulation which prohibited connection of such phones under impossibility theory)).

preemption,<sup>30</sup> while still approving in some cases a showing of economic indivisibility.<sup>31</sup> Moreover, several opinions have sometimes cast as a physical segregation problem that which is truly one of economics, presumably in order to sustain preemption.<sup>32</sup> Thus, Section 2(b) does not bar preemption in this case under an impossibility analysis that is predicated upon the geographic scope of the PCS licenses the Commission has chosen to award.

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<sup>30</sup> See California v. FCC, 798 F.2d 1515, 1519-1520 (D.C. Cir. 1986) (Commission's preemption, designed to further competition, of state entry regulation over use of FM subchannels for intrastate common carrier services violative of the Louisiana principles); Nat'l Assn of Regulatory Util. Commissioners v. FCC, 880 F.2d 422 (D.C. Cir. 1989) (FCC's preemption of state regulation over the installation and maintenance of inside wiring to encourage competition remanded because not narrowly tailored; while FCC demonstrated that it should be permitted to require states to unbundle inside wiring from basic transmission services, it did not meet its burden with respect to other state tariff requirements); California v. FCC, 905 F.2d 1217 (9th Cir. 1990) (FCC's preemption of state public utility regulation of enhanced services, state requirements for structural separation of basic and enhanced services, among other things, impermissible as not narrowly tailored (e.g., FCC's preemption encompassed prohibition against structural separation requirements for purely intrastate services)).

<sup>31</sup> California v. FCC, 39 F.3d 919 (9th Cir. 1994) (On review of remand, FCC's limited preemption of state structural separation requirements for jurisdictionally-mixed enhanced services, and of CPNI and network disclosure rules, upheld because narrowly tailored to impossibility exception); Illinois Bell Tel. Co. v. FCC, 883 F.2d 104 (D.C. Cir. 1989) (FCC's preemption of states' Centrex marketing regulations (including structural separation requirements) upheld because interstate and intrastate components of the FCC's regulation could not be separated).

<sup>32</sup> See Public Util. Comm'n of Texas v. FCC, 886 F.2d 1325 (D.C. Cir. 1989) (FCC's preemption of PUC's order which prohibited LEC from providing private microwave owner with additional interconnections to the PSTN upheld as private network incapable of separating interstate and intrastate calls); Pub. Service Comm'n of Maryland v. FCC, 909 F.2d 1510 (D.C. Cir. 1990) (FCC's preemption of states' authority to regulate rates that LECs charge to IXCs to disconnect telephone service for nonpayment of the interstate bill upheld as separation of interstate and intrastate access impossible).

The federal objective to be furthered in this case is the assurance of an efficient, competitive buildout of nationwide wireless communications infrastructure. As explained above, in preempting state rate and entry regulation of CMRS, Congress specifically recognized and accounted for the fact that "mobile services . . . by their nature, operate without regard to state lines."<sup>33</sup>

The Commission's adoption of PCS service areas based upon MTAs and BTAs -- geographic areas which follow patterns of trade and do not respect state lines -- demonstrates an express recognition of the interstate character of mobile services. The MTA/BTA service area licensing scheme represents a fundamental departure from telephone number area codes, the cellular MSA/RSA service markets as well as the local access and transport areas ("LATAs") defined within the MFJ. That is, area codes and cellular and LATA service areas were originally designed to respect state lines<sup>34</sup> while the MTA/BTA scheme clearly does not.

In adopting the MTA/BTA scheme, the Commission concluded that " . . . a combination of MTA and BTA service areas would promote the rapid deployment and ubiquitous coverage of PCS and a variety of services and providers."<sup>35</sup> It did so as a direct result of its experience with cellular systems where the trend toward clustering into regional areas generally occurred. Specifically, the Commission observed that because "there has been a great amount of consolidation of the MSA/RSA markets in the cellular service. . . [resulting] in unproductive regulatory

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<sup>33</sup> House Report at 260.

<sup>34</sup> See Administration of the North American Number Plan, Notice of Inquiry in CC Docket 92-237, 7 FCC Rcd 6837 (1993) (area codes); United States v. Western Elec. Co., 552 F. Supp. 131, 228-229 (D.D.C. 1982); United States v. Western Elec. Co., 569 F. Supp. 990, 990-995 (D.D.C. 1983) (LATAs).

<sup>35</sup> See Personal Communications Services, Second Report and Order in GEN Docket 90-314, 8 FCC Rcd 7700, 7732 (1993) (PCS Second Report); Id. (" . . . large PCS service areas also may facilitate regional and nationwide roaming; allow licensees to tailor their systems to the natural geographic dimensions of PCS markets; [and] reduce the cost of interference coordination between PCS licensees . . . BTAs and MTAs offer large service areas and therefore are complementary with and will facilitate the coordination and negotiation processes associated with the microwave relocation activities that will be necessary in many cases"); Id. at 7733 (" . . . MTAs will result in [the] operation of regional systems that will promote roaming within large geographic areas and may facilitate interoperability with other PCS systems").

and transaction costs in the assignment process for cellular," that "larger PCS service areas, such as MTAs and BTAs, will minimize these problems."<sup>36</sup>

The larger service areas necessarily will influence system architecture. That in turn will influence the optimal number and location of CMRS to LEC interconnections. It would be impossible to achieve the Congressionally-specified goal of efficient interstate services if systems' architecture and interconnection nodes have to be designed to accommodate varying requirements springing from each state's differing approach to interconnection compensation.

Thus, the adoption of an MTA/BTA licensing scheme establishes a federal design for mobile services consistent with Section 332. Because the Commission is charged with ensuring the continued growth and development of the national wireless infrastructure, the Commission may under Sections 332 and 2(b) preempt any state action inconsistent with a comprehensive federal arrangement.

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<sup>36</sup> PCS Second Report at 7732. (citation omitted).



# *The Economics of Interconnection*

*by*

*Gerald W. Brock*

*April 1995*

**TCG**

**Teleport Communications Group  
Two Teleport Drive, Staten Island, New York, 10311**

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## Preface

The three papers by Gerald W. Brock compiled herein are a clear, concise analysis of the economics of interconnection. Mr. Brock, former Chief, Common Carrier Bureau, U.S. Federal Communications Commission and now professor of telecommunication and Director, Graduate Telecommunication Program, the George Washington University, Washington, DC, goes to the heart of local telecommunications competition: compensation for the exchange of traffic among interconnected local networks, some of which retain market power. Mr. Brock explains how compensation arrangements that are administratively simple, economically correct and consistent with maximum network efficiency would arise in fully competitive markets. He explains why a market in transition to competition needs regulatory controls on compensation for interconnection, and why such regulatory controls must limit compensation to the actual cost of service. He explains why zero-priced interconnection ("sender keep all"), such as has been agreed to by commercial service providers on the Internet, meets these economic requirements. And he shows that "sender keep all" is a logical compensation arrangement in light of the fact that the incremental cost of providing necessary capacity for terminating traffic-- the only theoretically correct basis for calculating a call completion charge -- is trivial.

# The Economics of Interconnection

by Gerald Brock

## Introduction

The issues of interconnection rights and the compensation to be paid for traffic exchanged among interconnected companies have played a crucial role in the development of competitive alternatives throughout the history of the telecommunication industry. Interconnection disputes began with the early efforts to expand market power in the mid-nineteenth century telegraph industry and have continued to the present.<sup>1</sup> Although the long history of interconnection controversies provides several models of possible solutions to interconnection issues, the problems have not all been solved.

The emerging local competition requires an interconnection policy that will allow the efficient development of a "network of networks" in which customers have access to any combination of private and multiple public communications networks. The interconnection rules to and from monopoly networks should not be dependent on technology and should apply to both wireline and wireless services. This problem is more complex than past ones because there are no clear stationary boundaries across which interconnection must occur and because there will be a need for interconnection among companies with different and changing degrees of market power.

One important goal of regulation is to bring the results of a monopolized or partially monopolized market closer to what would occur under competitive conditions. Thus in considering the desirable price structure for regulated interconnection, the expected price structure under full competition is a useful guide.

The best existing example of interconnection under competitive conditions without regulation is the interconnection of commercial providers of Internet services. Because the Internet consists of many interconnected networks with relatively easy entry conditions and no regulation, it provides an example of a competitive network of networks. The growth of commercial services on the Internet and limitations on commercial products on the backbone network controlled by the National Science

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<sup>1</sup>A brief summary of FCC efforts to devise appropriate interconnection policies for customer premises equipment, long distance service, and international service is contained in the appendix to this paper. For a more complete account see generally Gerald Brock, The Telecommunications Industry: The Dynamics of Market Structure (Harvard University Press, 1981) and Telecommunication Policy for the Information Age: From Monopoly to Competition (Harvard University Press, 1994).

Foundation led to the formation of the Commercial Internet Exchange (CIX) in August 1991. Commercial Internet service providers agreed that interchange of traffic among them was of mutual benefit and that each should accept traffic from the other without settlements payments or interconnection charges. The CIX members therefore agreed to exchange traffic on a "sender keep all" basis in which each provider charges its own customers for originating traffic and agrees to terminate traffic for other providers without charge.<sup>2</sup>

The Internet example suggests that "sender keep all" interconnection arrangements are likely to develop in competitive communications markets as the compensation method for mutually beneficial interconnection arrangements. However, most telecommunication markets are not fully competitive. Incumbent telephone companies with market power have an incentive to use interconnection prices as a method of limiting competitive entry.

In November 1994, the European Commission released a study that it commissioned from a prestigious group of European and American telecommunication experts regarding issues of interconnection in an increasingly competitive telecommunication industry.<sup>3</sup> The study found that continued regulatory oversight of interconnection conditions would be necessary in order to allow effective competition to flourish. It recommended that interconnection rates be based on cost and set as a capacity charge. The European Commission study's conclusions that telephone company incumbents will set interconnection prices too high without regulatory controls and that interconnection charges should be based on the incremental cost of capacity required by the interconnector are directly relevant to the development of competition in the United States. The principles developed in that study are designed to promote a dynamic and efficient telecommunication market and are applicable to the U.S. telecommunication market as well as the European telecommunication market.

In order to apply the principle of setting interconnection charges at the incremental cost of capacity required to terminate the traffic, it is necessary to estimate that cost. The most comprehensive public engineering study of incremental cost was done by the Incremental Cost Task Force with members from GTE, Pacific Bell, the California Public Utilities Commission, and the RAND Corporation.<sup>4</sup> The Task Force had access to data for telephone companies in California and performed a detailed

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<sup>2</sup>Padmanabhan Srinagesh, "Internet Cost Structures and Interconnection Agreements," in Gerald Brock, ed. Toward a Competitive Telecommunication Industry: Selected Papers from the 1994 Telecommunications Policy Research Conference (Hillsdale, N.J.: Lawrence Erlbaum, in press).

<sup>3</sup>J. Arnbak, B. Mitchell, W. Neu, K. Neumann, and I. Vogelsang, Network Interconnection in the Domain of ONP: Study for DG XII of the European Commission (Brussels: European Commission, 1994).

<sup>4</sup>Bridger M. Mitchell, Incremental Costs of Telephone Access and Local Use, (Santa Monica, CA: The Rand Corporation, 1990); reprinted in William Pollard, ed., Marginal Cost Techniques for Telephone Services: Symposium Proceedings (Columbus, Ohio: National Regulatory Research Institute, 1991) (NRRI 91-6).

engineering cost study for various output measures of local telephone service. Individual components were priced based on 1988 prices and costs were computed for switch investment, switch maintenance, interoffice transport, and call attempts. All costs were computed for calls during the busiest hour of the year because the investment and associated expenses are related entirely to capacity cost.

The task force computed a cost of \$6.00 to \$11.00 per year to provide the capacity for 100 call seconds of local usage during the busiest hour of the year, plus a cost of \$.30 to \$.90 per year to provide the capacity for an additional call attempt during the busiest hour of the year. Using reasonable assumptions regarding the distribution of traffic, those capacity costs translate into an average cost of supplying additional local usage capacity of approximately 0.2 cents per minute. Because the actual cost is higher than the average during the peak periods and because the actual cost is zero during non-peak periods, it is more efficient to charge based on the maximum capacity required than to charge at the average cost per minute for each minute of use.

The three attached papers discuss the interconnection issues in detail. The first focuses on the importance of using capacity measures for interconnection rather than charges per minute of use. The second reviews previous studies of the incremental cost of local usage. The third examines the implications of various interconnection policies and shows that mutual compensation without control of the actual rates for interconnection does not limit monopoly power.

The analysis in the three papers leads to the following conclusions:

- (1) If there are no regulatory controls on compensation for interconnection, the monopolist of part of the market can extend its monopoly power to the entire market;
- (2) A compensation policy for the mutual exchange of local traffic without limits on the level of rates does not limit market power;
- (3) The interconnection of two communications networks provides a benefit to customers of both networks;
- (4) The commercial providers of competitive non-regulated Internet service have recognized the mutual benefits of interconnection by agreeing to interconnect on a "sender keep all" basis, terminating traffic originated by others in exchange for having their originating traffic terminated by others;
- (5) Minutes of use interconnection charges would not be sustainable in a highly competitive market;
- (6) Minutes of use interconnection charges fail to attain maximum efficiency and lead to incorrect investment signals;
- (7) Minutes of use interconnection charges have been used in the past as a convenient allocator for fully distributed cost under regulated monopoly, but are not appropriate in the emerging market structure of greater local competition;

- (8) In order to facilitate the transition to a competitive local communications market, regulators should emulate the competitive market outcome by setting interconnection prices determined by the cost of providing the necessary capacity for terminating traffic;
- (9) A reasonable estimate of the average incremental cost of terminating traffic received from a competitor using digital technology is 0.2 cents per minute, but the actual cost is determined only by the maximum capacity required and not by the total number of minutes terminated;
- (10) "Sender keep all" is an administratively simple mutual compensation scheme with zero prices for terminating service. It is an attractive approximation to the theoretically correct policy of cost based prices when the incremental cost of terminating service is low.

# **Price Structure Issues in Interconnection Fees**

Gerald W. Brock

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(Prepared for Teleport Communications Group)

## **Summary**

The interconnection of two communication networks provides a benefit to the customers of both networks by allowing customers of one network to communicate with customers of the other network. If traffic is roughly equal in both directions between the two networks, there is no need for either network to pay the other for interconnection. Each network can bill its own customers for their communications, and can terminate traffic received from the other network in exchange for the privilege of having its originating traffic terminated on the other network, an arrangement known as "sender keep all".

If traffic is primarily one way, it may be necessary for the company that is terminating the traffic to impose interconnection charges as compensation for the service it provides to the other company. If interconnection charges are imposed, they should be assessed at the long run incremental cost of adding capacity. The price structure should be a capacity charge per unit of time (as in private lines), not a minutes of use charge. A minutes of use charge causes inefficient calling choices and investment decisions and it would not occur in a competitive market.

## **I. Introduction**

One important goal of regulation is to bring the results of a monopolized or partially monopolized market closer to what would occur under competitive conditions. Thus in considering the desirable price structure for regulated interconnection, the expected price structure under full competition is a useful guide.

The best existing example of interconnection under competitive conditions without regulation is the interconnection of commercial providers of Internet services. Because the Internet consists of many interconnected networks with relatively easy entry conditions and no regulation, it provides an example of a competitive network of networks. The growth of commercial services on the Internet and limitations on commercial products on the backbone network controlled by the National Science Foundation led to the formation of the Commercial Internet Exchange (CIX) in August 1991. Commercial Internet service providers agreed that interchange of traffic among them was of mutual benefit and that each should accept traffic from the other without settlements payments or interconnection charges. The CIX members therefore agreed



to exchange traffic on a "sender keep all" basis in which each provider charges its own customers for originating traffic and agrees to terminate traffic for other providers without charge.<sup>1</sup>

The Internet example suggests that "sender keep all" interconnection arrangements are likely to develop in competitive communications markets as the compensation method for mutually beneficial interconnection arrangements. However, most telecommunication markets are not fully competitive. Incumbent telephone companies with market power have an incentive to use interconnection prices as a method of limiting competitive entry. Interconnection arrangements and prices have consequently been a major regulatory issue in the United States and other countries that have allowed competition in communications markets. Interconnection arrangements continue to be a critical factor in the viability of communications competition.

In November 1994, the European Commission released a study that it commissioned from a prestigious group of European and American telecommunication experts regarding issues of interconnection in an increasingly competitive telecommunication industry.<sup>2</sup> The study found that continued regulatory oversight of interconnection conditions would be necessary in order to allow effective competition to flourish. It recommended that interconnection rates be based on cost and set as a capacity charge. Specifically, the study concluded:

1. "If left to themselves, markets for interconnection services are likely to reflect either collusive arrangements or monopoly power of incumbent TOs [Telecommunication Operators]. In either case, interconnection prices are likely to be too high relative to prices that would emerge under competitive conditions."<sup>3</sup>
2. "We call for cost-based interconnection charges (based on  $MC_{IX}$  or  $AIC_{IX}$ ) [marginal cost of interconnection or average incremental cost of interconnection]."<sup>4</sup>

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<sup>1</sup>Padmanabhan Srinagesh, "Internet Cost Structures and Interconnection Agreements," in Gerald Brock, ed. Toward a Competitive Telecommunication Industry: Selected Papers from the 1994 Telecommunications Policy Research Conference (Hillsdale, N.J.: Lawrence Erlbaum, in press).

<sup>2</sup>J. Arnbak, B. Mitchell, W. Neu, K. Neumann, and I. Vogelsang, Network Interconnection in the Domain of ONP: Study for DG XII of the European Commission (Brussels: European Commission, 1994).

<sup>3</sup>Ibid., p. 69.

<sup>4</sup>Ibid., p. 84.